

This listing of claims will replace all prior versions of claims in the application.

Claims 1-4. (cancelled)

Claim 5. (new) A method for electrodepositing copper on a semiconductor silicon wafer substrate having trenches or via holes, comprising:

electrolytically depositing copper into the trenches or via holes of the silicon wafer substrate from an electroplating composition that comprises copper ions and one or more complexing agents for the copper ions and having a pH of from 4 to 8.4.

Claim 6. (new) The method of claim 5 wherein the one or more complexing agents are chosen from among an aminealkanol compound, cyclic acid-imide compound, and an organic phosphonic acid compound.

Claim 7. (new) The method of claim 5 wherein the one or more complexing agents are chosen from among monoethanolamine, diethanolamine, triethanolamine, succinimide, phthalimide, hydantoin, 5,5-dimethylhydantoin, aminotrimethylenephosphonic acid, 1-hydroxyethylidene-1,1-diphosphonic acid, ethylenediaminetetramethylenephosphonic acid, and diethylenetriaminepentamethylenephosphonic acid.

Claim 8. (new) The method of claim 5 wherein copper is deposited over a conductive seed layer.

Claim 9. (new) A method for electrodepositing copper on a semiconductor silicon wafer substrate having trenches or via holes, comprising:

electrolytically depositing copper into the trenches or via holes of the silicon wafer substrate from an electroplating composition that comprises copper ions and one or more complexing agents for the copper ions and having a pH of from 4 to 10,

wherein the one or more complexing agents are chosen from among an aminealkanol compound, cyclic acid-imide compound, and an organic phosphonic acid compound.

Claim 10. (new) The method of claim 9 wherein the one or more complexing agents are chosen from among monoethanolamine, diethanolamine, triethanolamine, succinimide, phthalimide, hydantoin, 5,5-dimethylhydantoin, aminotrimethylenephosphonic acid, 1-hydroxyethylidene-1,1-diphosphonic acid, ethylenediaminetetramethylenephosphonic acid, and diethylenetriaminepentamethylenephosphonic acid.

Claim 11. (new) The method of claim 9 wherein copper is deposited over a conductive seed layer.